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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/637,407	08/07/2003	Masaki Aoshima	890050.436	3159

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EXAMINER

ANGEBRANDT, MARTIN J

ART UNIT	PAPER NUMBER
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1795

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11/14/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/637,407	AOSHIMA ET AL.	
	Examiner	Art Unit	
	Martin J. Angebranndt	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-7, 13 and 17-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-7, 13 and 17-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/6/07</u> . | 6) <input type="checkbox"/> Other: _____ |

1. The response of the applicant has been read and given careful consideration. The applicant filed an IDS on 9/6/07 and these total approximately 100 references. It is unclear why these were cited because they do not appear to be "material to patentability" of the claimed invention (37 CFR 1.56).

MPEP 2004, particularly paragraph (13), sets forth guidelines to aid applicants in their duty of disclosure. In this section it is stated "It is desirable to avoid submission of long lists of documents if it can be avoided. Eliminate clearly irrelevant or marginally pertinent cumulative information. If a long list is submitted, highlight those documents, which have been specifically brought to the applicant's attention and/or are known to be of most significance. See Penn Yan Boats, Inc., v. Sea Lark Boats, Inc., 359 F. Supp. 948, 175 USPQ 260 (S.D. Fla. 1972), *aff'd*, 479 2d 1388, 178 USPQ 577 (5th Cir. 1973), *cert. denied* 414 U.S. 874 (1974)."

In an effort to clarify the "material" nature of these references to the patentability of the instant claims, applicants are requested to specify why each of the above referred to references were cited. (Note Applicants' PTOL-1449). Some of these were cited to teach specific protective layers, such as oxide and/or nitrides of Ti or Ta, which are not even disclosed in the instant specification.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 5,6,13 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. JP 62-204442.

An English language translation of this abstract is provided. Examiner requests that if the Applicants have a translation made of this reference that such be provided with Applicant's response.

Kobayashi et al. JP 62-204442 teaches an optical recording media comprising a recording layer consisting of at least two kinds of phase-change films having different composition wherein the first recording layer is of Si, Te, or the like and the second recording material is Au, Ag, Ge or the like. When the materials are recorded, the recording layers are alloyed. Recording layers (41, 42) are provided between dielectric layers (3, 5) wherein a protective layer (6) is opposite the substrate (2). With regard to the Applicants' capabilities of properties under specific irradiation, it is the Examiner's assertion is that the same compounds will react the same way (or similarly) under the same circumstances and thus the materials of Kobayashi anticipate these irradiations. While these properties are not specified in the English language abstract, it is further the Examiner's assertion that it would have been obvious to one of ordinary skill in the art at the time of invention to utilize the materials under near-field conditions, thereby satisfying these requirements. Examiner notes that with regard to claims 9-10 the additional dielectric layer furthest from the substrate acts as a "protective layer" as the dielectric layer can act as a barrier from damage from oxygen, mechanical contact and the like (further teaching found in example 4). The bilayer is 100 nm thick, the lower and upper dielectric layers are silicon dioxide and 100 nm thick. (example 4).

It would have been obvious to one skilled in the art to modify the examples of Kobayashi et al. JP 62-204442 by using Ge and Si as the recording bilayer with a reasonable expectation of success based upon the disclosure of equivalence.

The applicant argues that while Si/Au, Si/Ag and Te/Ge are exemplified, Si/Ge is not. Further, the teaching is not limited to the examples. A spot oral translation by USPTO staff indicates that the language describing the recording layers as consisting of a laminate of two different substances, such as Si/Au, Si/Ag, Te/Ge and the like is found on page 3 in the upper left column, third full paragraph and so supports a broader reading of possible substances for each of the recording layers. The examiner also notes that the elements asserted as obvious are disclosed and one of ordinary skill in the art would expect a change in the reflectance or the like from the bilayer initial state to a mixed/alloyed state of some sort. **The applicant seems to interpret the claims as requiring the layer to undergo alloying. The claims are silent on this and so this line of argument is not commensurate in scope with the coverage sought.** The applicant also asserts that no dielectrics are disclosed. The examiner points to the discussion of layers 3 and 5 on page 3, in the upper left column, which disclose SiO, SiO₂ and SiN, which are among the dielectrics discussed in the prepub of the instant application at [0050]. Therefore this position is without merit. The applicant's representative apparently fails to ask what protective layers 3 and 5 (there are two) were made of. The examiner suggests the applicant provide a translation of this document for the record, to prevent this in the future. Clearly the layers are separate at first in the reference and then mixed and the limitation of claim 21 is an intended use. The rejection stands.

The applicant has added an intended use limitation, specifically reciting that the media are useful with laser in the 350-450 nm range. The claims are not necessarily describing a structure optimized for use with 350-450 nm laser light (ie interferometric thicknesses of the layer and the like), but embrace any medium which could be recorded using these wavelengths

irrespective of laser power. The examiner holds that the media rendered obvious by the reference inherently are sensitive to these wavelengths bearing in mind that the metal layer will have a broad absorption. The rejection stands.

4. Claims 5-7, 13 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. JP 62-204442, as applied above, in view of Kinoshita et al. JP 2000-285509 (machine translation provided) and Morimoto et al. '345

Kinoshita et al. JP 2000-285509 teach a alloying recording medium comprising a substrate, a partially reflective layer (2), a dielectric layer (3), a recording bilayer (104,105), a second dielectric layer (5). The first recording layer can be Sn or the like [005]. The second recording layer is Ge [0015].

Morimoto et al. '345 teaches that the reflective layer may be on the same side of the recording film as the substrate if topside recording is to be used and on the opposite side of the recording films from the substrate if the recording is to take place through the substrate (6:42-65). The dielectric layers are disclosed as providing improvements in the stability and sensitivity of the overall device (7:42-8:12). The prevention of direct contact with the recording layer is further disclosed (7:1-10). The thickness of the dielectric layers may be 10 to 500 nm (7:51-8/12).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the medium rendered obvious by Kobayashi et al. JP 62-204442 by adding a reflective layer as taught by Kinoshita et al. JP 2000-285509 (machine translation provided) and Morimoto et al. '345 to allow reflective readout of the medium. Further it would have been obvious to use Sn in place of Si, to form an Sn/Ge bilayer as taught by Kinoshita et al. JP 2000-285509.

The applicant argues that the references are not combinable. This is without merit and all the references are within the optical recording media field and in particular, Kobayashi et al. JP 62-204442 and Kinoshita et al. JP 2000-285509 are both directed to alloying type optical recording media. The citation of Morimoto et al. '345 is merely to establish that the presence of the reflective layer control the side from which the recording layers can be accessed and this teachings would apply to any type of recording medium. The principle of operation is not modified by adding Kinoshita et al. JP 2000-285509 based upon the separation of the layers in Kobayashi et al. JP 62-204442 and the overriding principle is that of the recording layer is accessed by the laser beam and heated by it. The rejection stands for the reasons above.

5. Claims 5-7,13, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. JP 62-204442, in view of Kinoshita et al. JP 2000-285509 (machine translation provided) and Morimoto et al. '345, further in view of Okawa et al. JP 62-028941 or Fukano et al. '073.

Okawa et al. JP 62-028941 in the examples describes an optical recording medium, which is a Ge-C layer overlayed with a Te-C layer and these mix as shown in figures 2-4. The examiner does not have a translation of this reference. If the applicant has one made, the examiner would appreciate a copy with the next response. The examiner holds that Ge is a primary component in the first layer and C is a primary component in the second.

Fukano et al. '860 teach the use of carbon barrier layers between alloying/reaction recording bilayers (2/30-40, 3/5-20).

In addition to the basis above, it would have been obvious to one skilled in the art to modify the media resulting from the combination of Kobayashi et al. JP 62-204442 with

Kinoshita et al. JP 2000-285509 and Morimoto et al. '345 by using carbon containing layers as taught by Okawa et al. JP 62-028941 or by adding a carbon interlayer as taught by Fukano et al. '860 with a reasonable expectation of forming a useful alloying optical recording medium.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). As discussed above Kobayashi et al. JP 62-204442 teaches the dielectric layers (3,5) on both sides of the recording bilayer (4₁, 4₂) as illustrated in figure 2. Figure 3 shows multiple alternating layers in laminates. As discussed above, the claims do not recite alloying of the two recording layers and so this line of arguments is directed to an unrecited feature. The rejection stands for the reasons above.

6. Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. JP 62-204442 or Rii et al. JP 58-220794, in view of Wilkinson '261.

Rii et al. JP 58-220794 teach recording bilayers of Ge or Si with Al, Ag, Au, Sn, where these are mixed. The use of a protective layer is shown in figure 30 and silicon dioxide is disclosed in the examples.

Wilkinson et al. '261 teaches the use of a laser to melt a metal layer to form a recorded area.(2/28-48). The use of a HeCd laser is disclosed. (6/12-30). The thickness of the overlayers are optimized to maximize laser wavelength absorption.

It would have been obvious to one skilled in the art to modify the process for recording used by of either (Kobayashi et al. JP 62-204442 or Rii et al. JP 58-220794) by using other laser wavelengths which are old and well known for their use with inorganic bilayer optical recording

media, Such as the 442 nm emission of the HeCd laser with a reasonable expectation of successfully recording in the alloying bilayers.

7. Kobayashi et al. JP 62-204442 or Rii et al. JP 58-220794, in view of Wilkinson '261, further in view of Okawa et al. JP 62-028941 or Fukano et al. '073.

In addition to the basis above, it would have been obvious to one skilled in the art to modify the media used in the process of recording rendered obvious by the combination of either (Kobayashi et al. JP 62-204442 or Rii et al. JP 58-220794) with Wilkinson '261 by using carbon containing layers as taught by Okawa et al. JP 62-028941 or by adding a carbon interlayer as taught by Fukano et al. '860 with a reasonable expectation of forming a useful alloying optical recording medium.

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 5-7,13 and 17-21 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-20 of copending Application No. 11/268109 (US 2006/0078825). Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications including the embodiments where Si is present in one of the recording layers and either Sn, C or Ge are the primary components of the other recording layer.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

The applicant states that a terminal disclaimer may be filed should one of these become allowable. This provisional rejections are maintained.

10. Claims 5-7,13 and 17-21 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-19 of copending Application No. 10/818324 (US 2004/0202097). Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications including the embodiments where Si is present in one of the recording layers and either Sn, C or Ge are the primary components of the other recording layer.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

11. Claims 5-7,13 and 17-21 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-31 of copending Application No. 10/748979 (US 2004/0152016). Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications including the

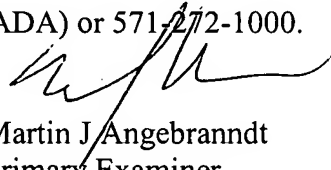
embodiments where Si, Ge or Sn are present in one of the recording layers and C is the primary components of the other recording layer.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J. Angebranndt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Martin J. Angebranndt
Primary Examiner
Art Unit 1795

11/9/2007